

## SEQUENCE LISTING

<110> Monahan, John  
 Zhao, Xumei  
 Chen, Yan  
 Glatt, Karen  
 Kamatkar, Shubhangi

<120> COMPOSITIONS, KITS AND METHODS FOR IDENTIFICATION,  
 ASSESSMENT, PREVENTION, AND THERAPY OF CERVICAL  
 CANCER

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<150> 60/404770

<151> 2002-08-20

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<212> DNA

<213> Homo sapiens

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&lt;211&gt; 2545

&lt;212&gt; DNA

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&lt;400&gt; 3

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 <213> Homo sapiens

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<210> 6

<211> 265

<212> PRT

<213> Homo sapiens

<400> 6

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35          40          45
Phe Gly Leu Ala Ile Gly Thr Leu Ala Gln Ala Leu Gly Pro Val Ser
50          55          60
Gly Gly His Ile Asn Pro Ala Ile Thr Leu Ala Leu Leu Val Gly Asn
65          70          75          80
Gln Ile Ser Leu Leu Arg Ala Phe Phe Tyr Val Ala Ala Gln Leu Val
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Ala Arg Gly Asn Leu Ala Val Asn Ala Leu Asn Asn Asn Thr Thr Gln
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Gly Gln Ala Met Val Val Glu Leu Ile Leu Thr Phe Gln Leu Ala Leu
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&lt;210&gt; 7

&lt;211&gt; 1935

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 7

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&lt;210&gt; 8

&lt;211&gt; 210

&lt;212&gt; PRT

<213> Homo sapiens

<400> 8

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Glu	Phe	Leu	Ala	Thr	Leu	Ile	Phe	Val	Phe	Phe	Gly	Leu	Gly	Ser	Ala
			20					25					30		
Leu	Lys	Trp	Pro	Ser	Ala	Leu	Pro	Thr	Ile	Leu	Gln	Ile	Ala	Leu	Ala
		35					40					45			
Phe	Gly	Leu	Ala	Ile	Gly	Thr	Leu	Ala	Gln	Ala	Leu	Gly	Pro	Val	Ser
50						55					60				
Gly	Gly	His	Ile	Asn	Pro	Ala	Ile	Thr	Leu	Ala	Leu	Leu	Val	Gly	Asn
65					70					75					80
Gln	Ile	Ser	Leu	Leu	Arg	Ala	Phe	Phe	Tyr	Val	Ala	Ala	Gln	Leu	Val
				85					90					95	
Gly	Ala	Ile	Ala	Gly	Ala	Gly	Ile	Leu	Tyr	Gly	Val	Ala	Pro	Leu	Asn
			100					105					110		
Ala	Arg	Gly	Asn	Leu	Ala	Val	Asn	Ala	Ile	Tyr	Phe	Thr	Gly	Cys	Ser
		115					120					125			
Met	Asn	Pro	Ala	Arg	Ser	Phe	Gly	Pro	Ala	Val	Val	Met	Asn	Arg	Phe
130						135					140				
Ser	Pro	Ala	His	Trp	Val	Phe	Trp	Val	Gly	Pro	Ile	Val	Gly	Ala	Val
145					150					155					160
Leu	Ala	Ala	Ile	Leu	Tyr	Phe	Tyr	Leu	Leu	Phe	Pro	Asn	Ser	Leu	Ser
				165					170					175	
Leu	Ser	Glu	Arg	Val	Ala	Ile	Ile	Lys	Gly	Thr	Tyr	Glu	Pro	Asp	Glu
			180					185					190		
Asp	Trp	Glu	Glu	Gln	Arg	Glu	Glu	Arg	Lys	Lys	Thr	Met	Glu	Leu	Thr
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	210														

<210> 9

<211> 2180

<212> DNA

<213> Homo sapiens

<400> 9

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<210> 10

<211> 222

<212> PRT

<213> Homo sapiens

<400> 10

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Glu Phe Leu Ala Thr Leu Ile Phe Val Phe Phe Gly Leu Gly Ser Ala
 20          25          30
Leu Lys Trp Pro Ser Ala Leu Pro Thr Ile Leu Gln Ile Ala Leu Ala
 35          40          45
Phe Gly Leu Ala Ile Gly Thr Leu Ala Gln Ala Leu Gly Pro Val Ser
 50          55          60
Gly Gly His Ile Asn Pro Ala Ile Thr Leu Ala Leu Leu Val Gly Asn
 65          70          75          80
Gln Ile Ser Leu Leu Arg Ala Phe Phe Tyr Val Ala Ala Gln Leu Val
 85          90          95
Gly Ala Ile Ala Gly Ala Gly Ile Leu Tyr Gly Val Ala Pro Leu Asn
100          105          110
Ala Arg Gly Asn Leu Ala Val Asn Ala Leu Asn Asn Asn Thr Thr Gln
115          120          125
Gly Gln Ala Met Val Val Glu Leu Ile Leu Thr Phe Gln Leu Ala Leu
130          135          140
Cys Ile Phe Ala Ser Thr Asp Ser Arg Arg Thr Ser Pro Val Gly Ser
145          150          155          160
Pro Ala Leu Ser Ile Gly Leu Ser Val Thr Leu Gly His Leu Val Gly
165          170          175
Ile Tyr Phe Thr Gly Cys Ser Met Asn Pro Ala Arg Ser Phe Gly Pro
180          185          190
Ala Val Val Met Asn Arg Phe Ser Pro Ala His Trp Gly Leu Leu Leu
195          200          205
Ser Leu Arg Gly Gly Asp Thr Arg Ser Val His Pro Ser Leu
210          215          220

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<210> 11

<211> 1051

<212> DNA

<213> Homo sapiens

<400> 11

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acggccttcg ggcagtgatg gagtgtcgca atgtcaccga tctcctgcaa caagagctga 300
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<210> 12

<211> 180

<212> PRT

<213> Homo sapiens

<400> 12

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Met Ala Ser Thr Ser Tyr Asp Tyr Cys Arg Val Pro Met Glu Asp Gly
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Asp Lys Arg Cys Lys Leu Leu Leu Gly Ile Gly Ile Leu Val Leu Leu
 20             25             30
Ile Ile Val Ile Leu Gly Val Pro Leu Ile Ile Phe Thr Ile Lys Ala
 35             40             45
Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg
 50             55             60
Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly
 65             70             75             80
Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met
 85             90             95
Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys
100             105             110
Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln
115             120             125
Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu
130             135             140
Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser
145             150             155             160
Ser Ser Ala Ala Ala Pro Gln Leu Leu Ile Val Leu Leu Gly Leu Ser
165             170             175
Ala Leu Leu Gln
180

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<210> 13

<211> 3445

<212> DNA

<213> Homo sapiens

<400> 13

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gctgttgggc ttcattctcg ccttctctgg atggatcggc gccatcgta gcaactgcct 300
gccccagtgg aggatttact cctatgccgg cgacaacatc gtgaccgccc aggccatgta 360

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<210> 14  
 <211> 211  
 <212> PRT  
 <213> Homo sapiens

<400> 14  
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 Tyr Ser Tyr Ala Gly Asp Asn Ile Val Thr Ala Gln Ala Met Tyr Glu  
                   35                  40                  45  
 Gly Leu Trp Met Ser Cys Val Ser Gln Ser Thr Gly Gln Ile Gln Cys  
                   50                  55                  60  
 Lys Val Phe Asp Ser Leu Leu Asn Leu Ser Ser Thr Leu Gln Ala Thr  
  65                  70                  75                  80  
 Arg Ala Leu Met Val Val Gly Ile Leu Leu Gly Val Ile Ala Ile Phe  
                   85                  90                  95  
 Val Ala Thr Val Gly Met Lys Cys Met Lys Cys Leu Glu Asp Asp Glu  
                   100                  105                  110  
 Val Gln Lys Met Arg Met Ala Val Ile Gly Gly Ala Ile Phe Leu Leu  
                   115                  120                  125  
 Ala Gly Leu Ala Ile Leu Val Ala Thr Ala Trp Tyr Gly Asn Arg Ile  
                   130                  135                  140  
 Val Gln Glu Phe Tyr Asp Pro Met Thr Pro Val Asn Ala Arg Tyr Glu  
  145                  150                  155                  160  
 Phe Gly Gln Ala Leu Phe Thr Gly Trp Ala Ala Ser Leu Cys Leu  
                   165                  170                  175  
 Leu Gly Gly Ala Leu Leu Cys Cys Ser Cys Pro Arg Lys Thr Thr Ser  
                   180                  185                  190  
 Tyr Pro Thr Pro Arg Pro Tyr Pro Lys Pro Ala Pro Ser Ser Gly Lys  
                   195                  200                  205  
 Asp Tyr Val  
                   210

&lt;210&gt; 15

&lt;211&gt; 1850

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 15

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<210> 16  
 <211> 142  
 <212> PRT  
 <213> Homo sapiens

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          20          25          30
Gly Ser Thr Ile Val Pro Gly Glu Gln Gly Ala Glu Tyr Gln His Phe
          35          40          45
Ile Gln Gln Cys Thr Asp Asp Val Arg Leu Phe Ala Phe Val Arg Phe
          50          55          60
Thr Thr Gly Asp Ala Met Ser Lys Arg Ser Lys Phe Ala Leu Ile Thr
 65          70          75          80
Trp Ile Gly Glu Asn Val Ser Gly Leu Gln Arg Ala Lys Thr Gly Thr
          85          90          95
Asp Lys Thr Leu Val Lys Glu Val Val Gln Asn Phe Ala Lys Glu Phe
          100         105         110
Val Ile Ser Asp Arg Lys Glu Leu Glu Glu Asp Phe Ile Lys Ser Glu
          115         120         125
Leu Lys Lys Ala Gly Gly Ala Asn Tyr Asp Ala Gln Thr Glu
          130         135         140

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<210> 17  
 <211> 662  
 <212> DNA  
 <213> Homo sapiens

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<400> 17
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<210> 18  
 <211> 122  
 <212> PRT  
 <213> Homo sapiens

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<400> 18
Met Glu Ala Ser Ala Leu Thr Ser Ser Ala Val Thr Ser Val Ala Lys
 1           5           10           15
Val Val Arg Val Ala Ser Gly Ser Ala Val Val Leu Pro Leu Ala Arg
          20          25          30
Ile Ala Thr Val Val Ile Gly Gly Val Val Ala Met Ala Ala Val Pro

```

```

      35              40              45
Met Val Leu Ser Ala Met Gly Phe Thr Ala Ala Gly Ile Ala Ser Ser
   50              55              60
Ser Ile Ala Ala Lys Met Met Ser Ala Ala Ala Ile Ala Asn Gly Gly
65              70              75              80
Gly Val Ala Ser Gly Ser Leu Val Gly Thr Leu Gln Ser Leu Gly Ala
      85              90              95
Thr Gly Leu Ser Gly Leu Thr Lys Phe Ile Leu Gly Ser Ile Gly Ser
      100              105              110
Ala Ile Ala Ala Val Ile Ala Arg Phe Tyr
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```

<210> 19  
 <211> 653  
 <212> DNA  
 <213> Homo sapiens

<400> 19

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```

<210> 20  
 <211> 119  
 <212> PRT  
 <213> Homo sapiens

<400> 20

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Met Glu Ala Ser Ala Leu Thr Ser Ser Ala Val Thr Ser Val Ala Lys
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Val Val Arg Val Ala Ser Gly Ser Ala Val Val Leu Pro Leu Ala Arg
      20              25              30
Ile Ala Thr Val Val Ile Gly Gly Val Val Ala Val Pro Met Val Leu
      35              40              45
Ser Ala Met Gly Phe Thr Ala Ala Gly Ile Ala Ser Ser Ser Ile Ala
      50              55              60
Ala Lys Met Met Ser Ala Ala Ala Ile Ala Asn Gly Gly Gly Val Ala
65              70              75              80
Ser Gly Ser Leu Val Ala Thr Leu Gln Ser Leu Gly Ala Thr Gly Leu
      85              90              95
Ser Gly Leu Thr Lys Phe Ile Leu Gly Ser Ile Gly Ser Ala Ile Ala
      100              105              110
Ala Val Ile Ala Arg Phe Tyr
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<210> 21  
 <211> 4755  
 <212> DNA  
 <213> Homo sapiens

<400> 21

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<210> 22

<211> 1037

<212> PRT

<213> Homo sapiens

<400> 22

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Asn Pro Gly Ser Leu Phe Gly Tyr Ser Val Ala Leu His Arg Gln Thr
35      40      45
Glu Arg Gln Gln Arg Tyr Leu Leu Leu Ala Gly Ala Pro Arg Glu Leu
50      55      60
Ala Val Pro Asp Gly Tyr Thr Asn Arg Thr Gly Ala Val Tyr Leu Cys
65      70      75      80
Pro Leu Thr Ala His Lys Asp Asp Cys Glu Arg Met Asn Ile Thr Val
85      90      95
Lys Asn Asp Pro Gly His His Ile Ile Glu Asp Met Trp Leu Gly Val
100     105     110
Thr Val Ala Ser Gln Gly Pro Ala Gly Arg Val Leu Val Cys Ala His
115     120     125
Arg Tyr Thr Gln Val Leu Trp Ser Gly Ser Glu Asp Gln Arg Arg Met
130     135     140
Val Gly Lys Cys Tyr Val Arg Gly Asn Asp Leu Glu Leu Asp Ser Ser
145     150     155     160
Asp Asp Trp Gln Thr Tyr His Asn Glu Met Cys Asn Ser Asn Thr Asp
165     170     175
Tyr Leu Glu Thr Gly Met Cys Gln Leu Gly Thr Ser Gly Gly Phe Thr
180     185     190
Gln Asn Thr Val Tyr Phe Gly Ala Pro Gly Ala Tyr Asn Trp Lys Gly
195     200     205
Asn Ser Tyr Met Ile Gln Arg Lys Glu Trp Asp Leu Ser Glu Tyr Ser
210     215     220
Tyr Lys Asp Pro Glu Asp Gln Gly Asn Leu Tyr Ile Gly Tyr Thr Met
225     230     235     240
Gln Val Gly Ser Phe Ile Leu His Pro Lys Asn Ile Thr Ile Val Thr
245     250     255
Gly Ala Pro Arg His Arg His Met Gly Ala Val Phe Leu Leu Ser Gln
260     265     270
Glu Ala Gly Gly Asp Leu Arg Arg Arg Gln Val Leu Glu Gly Ser Gln

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Pro	Arg	Leu	Arg	Phe	Ala	Gly	Ser	Glu	Ser	Ala	Val	Phe	His	Gly	Phe	
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Leu	Asp	Ala	Tyr	Pro	Ile	Leu	Asn	Gln	Ala	Gln	Ala	Leu	Glu	Asn	His	
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Thr	Glu	Val	Gln	Phe	Gln	Lys	Glu	Cys	Gly	Pro	Asp	Asn	Lys	Cys	Glu	
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Ser Gly Met Lys Thr Val Glu Asp Val Gly Ser Pro Leu Lys Tyr Glu  
 770 775 780  
 Phe Gln Val Gly Pro Met Gly Glu Gly Leu Val Gly Leu Gly Thr Leu  
 785 790 795 800  
  
 Val Leu Gly Leu Glu Trp Pro Tyr Glu Val Ser Asn Gly Lys Trp Leu  
 805 810 815  
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 820 825 830  
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 Pro Gly Gly Gly Gln Gly Pro Pro Pro Val Thr Leu Ala Ala Ala Lys  
 865 870 875 880  
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 Cys Val Trp Leu Glu Cys Pro Ile Pro Asp Ala Pro Val Val Thr Asn  
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 Val Thr Val Lys Ala Arg Val Trp Asn Ser Thr Phe Ile Glu Asp Tyr  
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 Gly Leu Ile Ile Leu Leu Leu Trp Lys Cys Gly Phe Phe Lys Arg Ala  
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&lt;210&gt; 23

&lt;211&gt; 4647

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 23

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<211> 4474
<212> DNA
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&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 26

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&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 27

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&lt;210&gt; 29

&lt;211&gt; 3176

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 29

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&lt;210&gt; 30

&lt;211&gt; 408

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 30

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&lt;211&gt; 3744

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 31

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&lt;210&gt; 32

&lt;211&gt; 821

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 32

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Glu Val Arg Asp Glu Val Ala Glu Lys Cys Gln Lys Leu Phe Leu Asp
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Phe Leu Glu Glu Phe Gln Ser Ser Asp Gly Glu Ile Lys Tyr Leu Gln
          35          40          45
Leu Ala Glu Glu Leu Ile Arg Pro Glu Arg Asn Thr Leu Val Val Ser
          50          55          60
Phe Val Asp Leu Glu Gln Phe Asn Gln Gln Leu Ser Thr Thr Ile Gln
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Glu Glu Phe Tyr Arg Val Tyr Pro Tyr Leu Cys Arg Ala Leu Lys Thr
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Cys	Gln	Thr	Val	Ile	Arg	Asp	Val	Glu	Gln	Gln	Phe	Lys	Tyr	Thr	Gln
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Val	Asp	Gly	Tyr	Glu	Thr	Glu	Gly	Ile	Arg	Gly	Leu	Arg	Ala	Leu	Gly
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Asp	Tyr	Ala	Ile	Ala	Arg	Arg	Ile	Val	Asp	Leu	His	Ser	Arg	Ile	Glu
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Glu	Ser	Ile	Asp	Arg	Val	Tyr	Ser	Leu	Asp	Asp	Ile	Arg	Arg	Tyr	Leu
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Leu	Phe	Ala	Arg	Gln	Phe	Lys	Pro	Lys	Ile	Ser	Lys	Glu	Ser	Glu	Asp

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 625 630 635 640  
 Gln Pro Lys His Val Lys Glu Ala Phe Arg Leu Leu Asn Lys Ser Ile  
 645 650 655  
 Ile Arg Val Glu Thr Pro Asp Val Asn Leu Asp Gln Glu Glu Glu Ile  
 660 665 670  
 Gln Met Glu Val Asp Glu Gly Ala Gly Gly Ile Asn Gly His Ala Asp  
 675 680 685  
  
 Ser Pro Ala Pro Val Asn Gly Ile Asn Gly Tyr Asn Glu Asp Ile Asn  
 690 695 700  
 Gln Glu Ser Ala Pro Lys Ala Ser Leu Arg Leu Gly Phe Ser Glu Tyr  
 705 710 715 720  
 Cys Arg Ile Ser Asn Leu Ile Val Leu His Leu Arg Lys Val Glu Glu  
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 Glu Glu Asp Glu Ser Ala Leu Lys Arg Ser Glu Leu Val Asn Trp Tyr  
 740 745 750  
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 Lys Lys Arg Ile Ile Glu Lys Val Ile His Arg Leu Thr His Tyr Asp  
 770 775 780  
 His Val Leu Ile Glu Leu Thr Gln Ala Gly Leu Lys Gly Ser Thr Glu  
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 Tyr Leu Leu Glu Asp  
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 <212> DNA  
 <213> Homo sapiens

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aaaaaaaaaa a                                     2111

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&lt;210&gt; 34

&lt;211&gt; 622

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 34

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Pro Ser Arg Thr Leu Ala Gly Glu Thr Gly Gln Glu Ala Pro Leu
          35          40          45
Asp Gly Val Leu Ala Asn Pro Asn Ile Ser Ser Leu Ser Pro Arg
          50          55          60
Gln Leu Leu Gly Phe Pro Cys Ala Glu Val Ser Gly Leu Ser Thr Glu
          65          70          75          80
Arg Val Arg Glu Leu Ala Val Ala Leu Ala Gln Lys Asn Val Lys Leu
          85          90          95
Ser Thr Glu Gln Leu Arg Cys Leu Ala His Arg Leu Ser Glu Pro Pro
          100          105          110
Glu Asp Leu Asp Ala Leu Pro Leu Asp Leu Leu Leu Phe Leu Asn Pro
          115          120          125
Asp Ala Phe Ser Gly Pro Gln Ala Cys Thr Arg Phe Phe Ser Arg Ile
          130          135          140
Thr Lys Ala Asn Val Asp Leu Leu Pro Arg Gly Ala Pro Glu Arg Gln
          145          150          155          160
Arg Leu Leu Pro Ala Leu Ala Cys Trp Gly Val Arg Gly Ser Leu
          165          170          175
Leu Ser Glu Ala Asp Val Arg Ala Leu Gly Gly Leu Ala Cys Asp Leu
          180          185          190
Pro Gly Arg Phe Val Ala Glu Ser Ala Glu Val Leu Leu Pro Arg Leu
          195          200          205
Val Ser Cys Pro Gly Pro Leu Asp Gln Asp Gln Gln Glu Ala Ala Arg
          210          215          220
Ala Ala Leu Gln Gly Gly Gly Pro Pro Tyr Gly Pro Pro Ser Thr Trp
          225          230          235          240
Ser Val Ser Thr Met Asp Ala Leu Arg Gly Leu Leu Pro Val Leu Gly
          245          250          255
Gln Pro Ile Ile Arg Ser Ile Pro Gln Gly Ile Val Ala Ala Trp Arg
          260          265          270
Gln Arg Ser Ser Arg Asp Pro Ser Trp Arg Gln Pro Glu Arg Thr Ile
          275          280          285
Leu Arg Pro Arg Phe Arg Arg Glu Val Glu Lys Thr Ala Cys Pro Ser
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Gly Lys Lys Ala Arg Glu Ile Asp Glu Ser Leu Ile Phe Tyr Lys Lys

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Lys	His	Lys	Leu	Asp	Glu	Leu	Tyr	Pro	Gln	Gly	Tyr	Pro	Glu	Ser	Val
				355					360					365	
Ile	Gln	His	Leu	Gly	Tyr	Leu	Phe	Leu	Lys	Met	Ser	Pro	Glu	Asp	Ile
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385					390					395					400
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Arg	Phe	Val	Lys	Gly	Arg	Gly	Gln	Leu	Asp	Lys	Asp	Thr	Leu	Asp	Thr
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Leu	Thr	Ala	Phe	Tyr	Pro	Gly	Tyr	Leu	Cys	Ser	Leu	Ser	Pro	Glu	Glu
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Arg	Leu	Ala	Phe	Gln	Asn	Met	Asn	Gly	Ser	Glu	Tyr	Phe	Val	Lys	Ile
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Gln	Ser	Phe	Leu	Gly	Gly	Ala	Pro	Thr	Glu	Asp	Leu	Lys	Ala	Leu	Ser
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Pro	His	Val	Glu	Gly	Leu	Lys	Ala	Glu	Glu	Arg	His	Arg	Pro	Val	Arg
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Asp	Trp	Ile	Leu	Arg	Gln	Arg	Gln	Asp	Asp	Leu	Asp	Thr	Leu	Gly	Leu
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Gly	Leu	Gln	Gly	Gly	Ile	Pro	Asn	Gly	Tyr	Leu	Val	Leu	Asp	Leu	Ser
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Val	Gln	Glu	Ala	Leu	Ser	Gly	Thr	Pro	Cys	Leu	Leu	Gly	Pro	Gly	Pro
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<212> DNA
<213> Homo sapiens
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 <212> PRT  
 <213> Homo sapiens

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 35 40 45  
 Phe Gly Gln Gln Asp Trp Lys Phe Leu Ala Ser His Phe Pro Asn Arg  
 50 55 60  
 Thr Asp Gln Gln Cys Gln Tyr Arg Trp Leu Arg Val Leu Asn Pro Asp  
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 Leu Val Lys Lys Tyr Gly Thr Lys Gln Trp Thr Leu Ile Ala Lys His  
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 115 120 125  
 Leu Asn Pro Glu Val Lys Lys Ser Cys Trp Thr Glu Glu Glu Asp Arg  
 130 135 140  
 Ile Ile Cys Glu Ala His Lys Val Leu Gly Asn Arg Trp Ala Glu Ile  
 145 150 155 160  
 Ala Lys Met Leu Pro Gly Arg Thr Asp Asn Ala Val Lys Asn His Trp

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Ser	Lys	Asp	Cys	Lys	Pro	Pro	Val	Tyr	Leu	Leu	Leu	Glu	Leu	Glu	Asp
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225				230						235					240
Ser	Glu	Glu	Glu	Leu	Ala	Ala	Ala	Thr	Thr	Ser	Lys	Glu	Gln	Glu	Pro
			245						250					255	
Ile	Gly	Thr	Asp	Leu	Asp	Ala	Val	Arg	Thr	Pro	Glu	Pro	Leu	Glu	Glu
			260					265					270		
Phe	Pro	Lys	Arg	Glu	Asp	Gln	Glu	Gly	Ser	Pro	Pro	Glu	Thr	Ser	Leu
		275					280					285			
Pro	Tyr	Lys	Trp	Val	Val	Glu	Ala	Ala	Asn	Leu	Leu	Ile	Pro	Ala	Val
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Gly	Ser	Ser	Leu	Ser	Glu	Ala	Leu	Asp	Leu	Ile	Glu	Ser	Asp	Pro	Asp
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Ala	Trp	Cys	Asp	Leu	Ser	Lys	Phe	Asp	Leu	Pro	Glu	Glu	Pro	Ser	Ala
			325					330						335	
Glu	Asp	Ser	Ile	Asn	Asn	Ser	Leu	Val	Gln	Leu	Gln	Ala	Ser	His	Gln
			340					345					350		
Gln	Gln	Val	Leu	Pro	Pro	Arg	Gln	Pro	Ser	Ala	Leu	Val	Pro	Ser	Val
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Thr	Glu	Tyr	Arg	Leu	Asp	Gly	His	Thr	Ile	Ser	Asp	Leu	Ser	Arg	Ser
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Ser	Gly	Ile	Gly	Thr	Pro	Pro	Ser	Val	Leu	Lys	Arg	Gln	Arg	Lys	Arg
			405					410						415	
Arg	Val	Ala	Leu	Ser	Pro	Val	Thr	Glu	Asn	Ser	Thr	Ser	Leu	Ser	Phe
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Leu	Asp	Ser	Cys	Asn	Ser	Leu	Thr	Pro	Lys	Ser	Thr	Pro	Val	Lys	Thr
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Thr	Leu	Glu	Leu	Glu	Ser	Pro	Ser	Leu	Thr	Ser	Thr	Pro	Val	Cys	Ser
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Gln	Lys	Val	Val	Val	Thr	Thr	Pro	Leu	His	Arg	Asp	Lys	Thr	Pro	Leu
			485						490					495	
His	Gln	Lys	His	Ala	Ala	Phe	Val	Thr	Pro	Asp	Gln	Lys	Tyr	Ser	Met
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Asp	Asn	Thr	Pro	His	Thr	Pro	Thr	Pro	Phe	Lys	Asn	Ala	Leu	Glu	Lys
		515													

Ala	Pro	Met	Ser	Ser	Ala	Trp	Lys	Thr	Val	Ala	Cys	Gly	Gly	Thr	Arg
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Asp	Gln	Leu	Phe	Met	Gln	Glu	Lys	Ala	Arg	Gln	Leu	Leu	Gly	Arg	Leu
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 <212> DNA  
 <213> Homo sapiens

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 <211> 431  
 <212> PRT  
 <213> Homo sapiens

<400> 38  
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Cys Leu Asn Gly Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile			
35	40	45	
His Trp Cys Asn Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile		60	
50	55	75	80
Asp Lys Ser Lys Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly			
65	70		
Lys Ala Ser Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser		90	95
85			
Ala Thr Val Leu Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu		105	110
100			
Gln Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg		120	125
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Arg Arg Pro Trp Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln		140	
130	135		
Glu Cys Met Val His Asp Cys Ala Asp Gly Lys Lys Pro Ser Ser Pro		155	160
145	150		
Pro Glu Glu Leu Lys Phe Gln Cys Gly Gln Lys Thr Leu Arg Pro Arg		170	175
165			
Phe Lys Ile Ile Gly Gly Glu Phe Thr Thr Ile Glu Asn Gln Pro Trp		185	190
180			
Phe Ala Ala Ile Tyr Arg Arg His Arg Gly Gly Ser Val Thr Tyr Val		200	205
195			
Cys Gly Gly Ser Leu Ile Ser Pro Cys Trp Val Ile Ser Ala Thr His		220	
210	215		
Cys Phe Ile Asp Tyr Pro Lys Lys Glu Asp Tyr Ile Val Tyr Leu Gly		235	240
225	230		
Arg Ser Arg Leu Asn Ser Asn Thr Gln Gly Glu Met Lys Phe Glu Val		250	255
245			
Glu Asn Leu Ile Leu His Lys Asp Tyr Ser Ala Asp Thr Leu Ala His		265	270
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His Asn Asp Ile Ala Leu Leu Lys Ile Arg Ser Lys Glu Gly Arg Cys		280	285
275	280		
Ala Gln Pro Ser Arg Thr Ile Gln Thr Ile Cys Leu Pro Ser Met Tyr		300	
290	295		
Asn Asp Pro Gln Phe Gly Thr Ser Cys Glu Ile Thr Gly Phe Gly Lys		315	320
305	310		
Glu Asn Ser Thr Asp Tyr Leu Tyr Pro Glu Gln Leu Lys Met Thr Val		330	335
325			
Val Lys Leu Ile Ser His Arg Glu Cys Gln Gln Pro His Tyr Tyr Gly		345	350
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Ser Glu Val Thr Thr Lys Met Leu Cys Ala Ala Asp Pro Gln Trp Lys		360	365
355	360		
Thr Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Ser Leu		380	
370	375		
Gln Gly Arg Met Thr Leu Thr Gly Ile Val Ser Trp Gly Arg Gly Cys		395	400
385	390		
Ala Leu Lys Asp Lys Pro Gly Val Tyr Thr Arg Val Ser His Phe Leu		410	415
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Pro Trp Ile Arg Ser His Thr Lys Glu Glu Asn Gly Leu Ala Leu		425	430
420			

&lt;210&gt; 39

&lt;211&gt; 1760

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 39

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<210> 40
<211> 232
<212> PRT
<213> Homo sapiens

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20          25          30
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35          40          45
Leu Glu Ser Ser Asp Cys Glu Ser Leu Asp Ser Ser Asn Ser Gly Phe
50          55          60
Gly Pro Glu Glu Asp Thr Ala Tyr Leu Asp Gly Val Ser Leu Pro Asp
65          70          75          80
Phe Glu Leu Leu Ser Asp Pro Glu Asp Glu His Leu Cys Ala Asn Leu
85          90          95
Met Gln Leu Leu Gln Glu Ser Leu Ala Gln Ala Arg Leu Gly Ser Arg
100         105         110
Arg Pro Ala Arg Leu Leu Met Pro Ser Gln Leu Val Ser Gln Val Gly
115         120         125
Lys Glu Leu Leu Arg Leu Ala Tyr Ser Glu Pro Cys Gly Leu Arg Gly
130         135         140
Ala Leu Leu Asp Val Cys Val Glu Gln Gly Lys Ser Cys His Ser Val
145         150         155         160
Gly Gln Leu Ala Leu Asp Pro Ser Leu Val Pro Thr Phe Gln Leu Thr
165         170         175
Leu Val Leu Arg Leu Asp Ser Arg Leu Trp Pro Lys Ile Gln Gly Leu
180         185         190

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Glu	Gln	Leu	Leu	Ile	Glu	Glu	Cys								
225					230										

&lt;210&gt; 41

&lt;211&gt; 5698

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 41

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 <213> Homo sapiens

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Ile	Tyr	Gln	Lys	Lys	Thr	Gln	Leu	Glu	His	Ile	Leu	Leu	Arg	Pro	Asp
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&lt;211&gt; 4797

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 43

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<211> 432

<212> PRT

<213> Homo sapiens

<400> 44

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35 40 45
Trp Glu Cys Leu Asp Ala Asp Gln Met Asn Leu Tyr Lys Glu Val Met
50 55 60
Leu Glu Asn Phe Ser Asn Leu Val Ser Val Gly Leu Ser Asn Ser Lys
65 70 75 80
Pro Ala Val Ile Ser Leu Leu Glu Gln Gly Lys Glu Pro Trp Met Val
85 90 95
Asp Arg Glu Leu Thr Arg Gly Leu Cys Ser Asp Leu Glu Ser Met Cys
100 105 110
Glu Thr Lys Ile Leu Ser Leu Lys Lys Arg His Phe Ser Gln Val Ile
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Pro Pro Gln Lys Thr Met Ser Glu Glu Lys Pro Trp Glu Cys Lys Ile

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	180	185	190			
Phe Ser Arg Gly	Ser Leu Val Thr Arg His Gln Arg Ile His Thr Gly					
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Lys Lys Pro Tyr Glu Cys Lys Glu Cys Gly Lys Ala Phe Ser Cys Ser						
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Glu Cys Lys Glu Cys Gly Lys Ala Phe Lys Tyr Cys Ser Asn Leu Asn						
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Cys Gly Lys Ala Phe Thr Lys Ser Ser Gln Leu Phe Leu His Leu Arg						
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	290	295	300			
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385	390	395	400			
Ile His Thr Gly Glu Lys Pro Tyr Asp Cys Lys Glu Cys Gly Lys Ala						
	405	410	415			
Phe Gly Ser Arg Ser Asp Leu Ile Arg His Glu Gly Ile His Thr Gly						
	420	425	430			